

Conettix ITS-D6682-UL



EN | Installation Guide
Ethernet Network
Adapter



BOSCH

Contents

| | | |
|------------|--|-----------|
| 1.0 | Introduction..... | 3 |
| 1.1 | Network Interface | 3 |
| 1.2 | Serial Interface..... | 3 |
| 1.3 | LEDs | 3 |
| 2.0 | Installation..... | 4 |
| 2.1 | All Installations | 4 |
| 2.2 | Mounting the D6682..... | 4 |
| 2.3 | Connecting the D6682 | 4 |
| 3.0 | Configuring and Programming the D6682 ... | 5 |
| 3.1 | Factory Default IP Address | 5 |
| 3.2 | Identifying the MAC Hardware Address | 5 |
| 3.3 | Obtaining an IP Address | 5 |
| 3.4 | Using ARP to Assign the IP Address | 5 |
| 3.5 | ARP Command Usage..... | 6 |
| 3.6 | Using Telnet to Finish the Configuration | 7 |
| 3.7 | Programming Overview for the D6600 | 10 |
| 4.0 | Specifications | 11 |

Trademarks

Microsoft® Windows® 2000, XP, Vista™, and MS-DOS®, are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.

1.0 Introduction

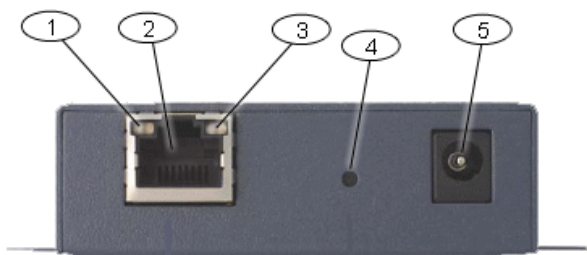
The Conettix D6682 Ethernet Network Adapter is a two-channel network adapter. Most networked installations only have one configured channel.



Follow these instructions to avoid the possibility of harm to the operator, or damage to the equipment.

1.1 Network Interface

Figure 1: Power/Ethernet



- 1- Ethernet Link LED
- 2- RJ45 Ethernet Jack
- 3- Ethernet Activity LED
- 4- Reset Pin
- 5- Power Plug

1.2 Serial Interface

Figure 2: D6682 Network Interface



- 1- Power/Diagnostic LEDs
- 2- Serial Port 2 (DTE) – optional (use supplied cable if required)
- 3- Serial Port 1 (DTE) – use supplied null cable

1.3 LEDs

Table 1: D6682 LEDs

| LED | Description |
|---|--|
| Power/Diagnostic (Blue) | Steady On: Power OK Blinking 2x: No DHCP response Blinking 2x: Setup Menu active |
| RX Serial 1 Activity (Green) | Off: No data activity Blinking: Data received by D6682 on Channel 1 |
| TX Serial 1 Activity (Yellow) | Off: No data activity Blinking: Data transmitted from D6682 on Channel 1 |
| RX Serial 2 Activity (Green) | Off: No data activity Blinking: Data received by D6682 on Channel 2 |
| TX Serial 2 Activity (Yellow) | Off: No data activity Blinking: Data transmitted from D6682 on Channel 2 |
| Ethernet Link (Bi-color LED on left) | Off: No Ethernet link established Solid Yellow: 10 Mbps Ethernet link established Solid Green: 100 Mbps Ethernet link established |
| Ethernet Activity (Bi-color LED on right) | Off: No data activity Solid Yellow: Half Duplex data activity Solid Green: Full Duplex data activity |

2.0 Installation

2.1 All Installations

Install the Conettix D6600 Communications Receiver/Gateway according to NFPA 70, NFPA 72, and the local authority having jurisdiction (AHJ).

The ITS-D6682-UL is suitable for Central Station Protective Signaling when it is installed and used in compliance with NFPA 72 and ANSI/NFPA 70. Installation limits for digital alarm communicator receivers (DACR) are under the jurisdiction of the local AHJ.

The equipment between Ethernet Interface Modules and the ITS-D6682-UL must be UL Listed Information Technology Equipment (ITE).

To comply with UL, ensure the following requirements are met:

- Mount the ITS-D6682-UL, the ITE network interface equipment, and the D6600 that it is connected to, in a standard 19-in rack.
- Connect the ITS-D6682-UL to an electrical outlet located inside the same rack with the D6682 and D6600.
- Install the ITS-D6682-UL in the same rack as the D6600 and within 6 m (20 ft) of the D6600.
- The Ethernet and RS-232 serial cables cannot exceed 6 m (20 ft) in length.
- Use an uninterruptible power supply (UPS) is when the ITS-D6682-UL is used for UL Fire (UL1481) Protective Signaling Systems.
- Use the supplied transformer (Group West/Part number - 48D-12-900)

2.2 Mounting the D6682

Mount the D6682 on a rail or other user-supplied spot behind the D6600 that it will be connected to. Refer to *Figure 3*.

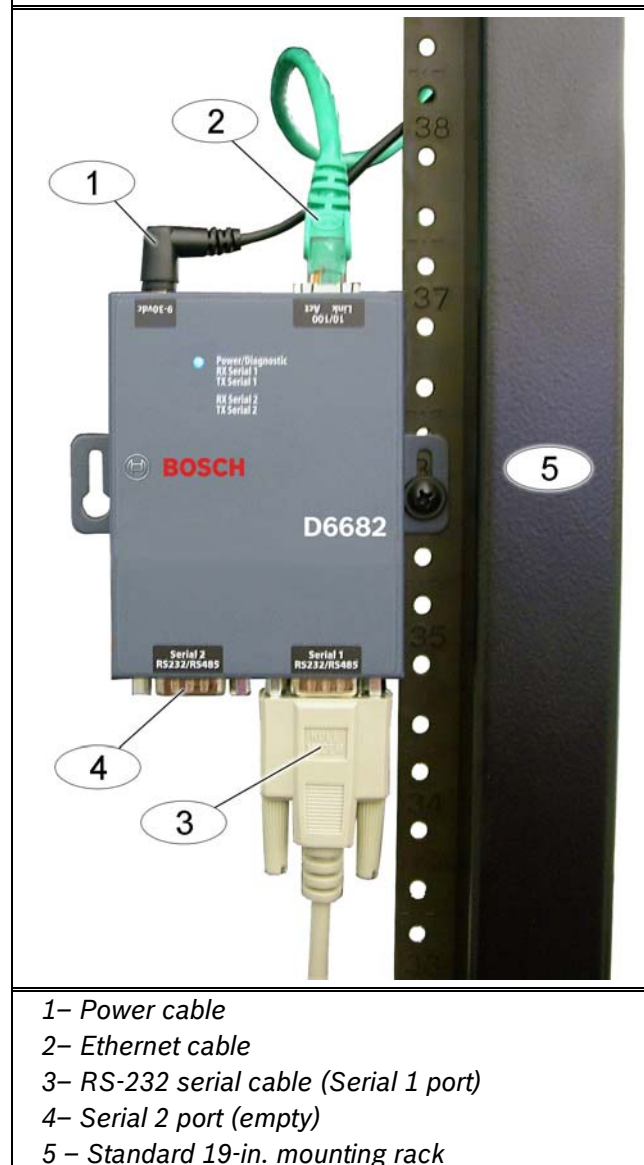
2.3 Connecting the D6682

Connect the D6682 as follows:

- Power cable to an available electrical outlet
- Ethernet cable to network switch
- RS-232 serial cable to Serial 1 port
Refer to the *D6600/D6100i System Guide* (P/N: 4998122712) for applications using both serial ports.

Refer to *Figure 3*.

Figure 3: D6682 Connections



3.0 Configuring and Programming the D6682

3.1 Factory Default IP Address

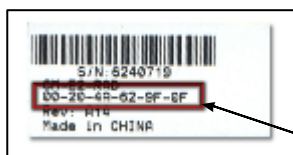
By default, the D6682 uses DHCP to obtain an IP Address. The unit requires a static IP Address. Refer to *Sections 3.2, 3.3, and 3.4* for more information.

3.2 Identifying the MAC Hardware Address

1. Verify that the D6682 is properly installed, connected, and powered.
Refer to *Section 2.0 Installation* on page 4.
2. Locate the D6682's media access control (MAC), or hardware, address.

The MAC address is hard-coded into the D6682 during manufacturing, and it cannot be changed. This address is 6 bytes (12 digits) in length and is located on a label on the D6682 in the format of "xx-xx-xx-xx-xx-xx".

Figure 4: MAC Address Location



1- MAC address location on D6682 label

3. Record the MAC address and keep it for reference.

3.3 Obtaining an IP Address

Provide the D6682's MAC address to the site's network administrator, who will assign an IP address to the D6682.

An IP Address is an identifier for a computer or device on a transmission control protocol/internet protocol (TCP/IP) network. Networks use the TCP/IP protocol route messages based on the IP address of the destination. The format of an IP address is a 32-bit numeric address written as four numbers or fields separated by periods. Each number can be 0 to 255.

For example, 190.200.128.111 could be an IP address. Within an isolated network, you can assign IP addresses at random if each one is unique. However, connecting a private network to the Internet requires using registered IP addresses (called Internet addresses) to avoid duplicates.

3.4 Using ARP to Assign the IP Address

Bosch Security Systems, Inc. recommends that you read this entire section before proceeding. Also, ensure that power is applied to the D6682 and the Ethernet Network RJ45 connection is in place.



In order to access the configuration program, ensure that the D6682 and the PC used to configure it are on the same gateway (the device that connects the LAN to the WAN).

Use the telnet program to communicate with the D6682 and establish its communication configuration parameters.

After the D6682 is configured and has an IP address, you can change the telnet configuration parameters from anywhere on the network.

The D6200 Software is the recommended way to program the network devices. If you choose to use the software to program the network devices, review *Section 3.7 Programming Overview for the D6600* on page 10, and the *D6200 Programming Software Operation and Installation Guide* (P/N: 4998154991).

1. When you have the IP address, and the network administrator confirms that it is ready, open the MS-DOS prompt on the host computer on the network to be used.
2. Use the address resolution protocol (ARP) program to assign a new IP address for the D6682.

ARP is a Windows-based program used to create a temporary association between an IP address and a hardware address, such as a MAC.

3. Place the ARP program in the C:\WINDOWS or C:\WINNT directory (depending on your operating system) by default during the installation of the operating system as shown in *Figure 5*.

Figure 5: ARP Command Syntax

```
arp -s xxx.xxx.xxx.xxx zz-zz-zz-zz-zz-zz
```

①
②

1- IP Address assigned to the D6682

2- MAC Hardware Address from D6682 label

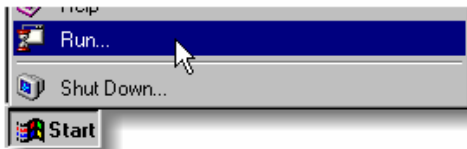
3.5 ARP Command Usage

Perform the following procedure when using the ARP command to assign an IP address to a D6682. The MAC address shown below is used as an example.

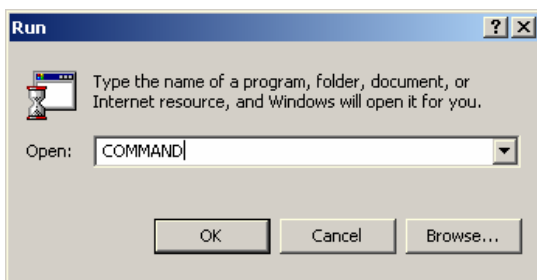
00-20-4a-12-04-0e

i The IP and MAC addresses used in this example are not the same as the numbers you are using. This procedure is for demonstration only.

1. Select **Start** → **Run** to open an MS-DOS window.



2. At the Run dialog box, type COMMAND and click **OK**.

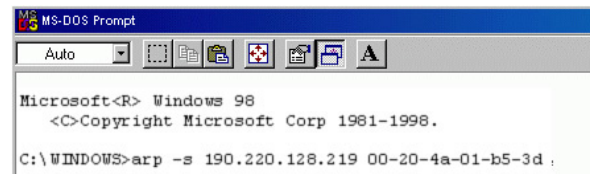


A DOS window appears.



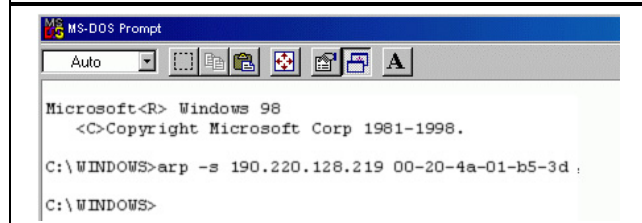
3. Type the arp -s command with the IP address and the MAC hardware address.

For this example the IP address is 190.220.128.219 and the MAC hardware address is: 00-20-4a-01-b5-3d



If the computer responds with the C:\WINDOWS> prompt after you enter the ARP command, the address is accepted. Refer to Figure 6.

Figure 6: MS-DOS Prompt



i There is no indication that the operation is properly performed. The absence of an error message is an indication that the ARP command was successful.

4. Type arp-g and press [ENTER] to verify that the IP address was entered correctly:
arp -g [ENTER]

3.6 Using Telnet to Finish the Configuration

i Although the screen shots are specific to Windows 2000, they are similar for Windows XP and Vista.

i In Windows Vista, Telnet is disabled by default. In order to use Telnet, you must enable it:

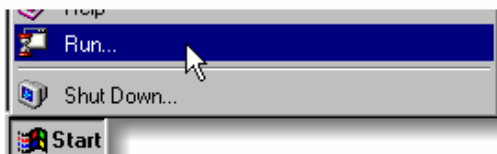
1. Click **Start→Control Panel→Programs**.
2. Click **Turn Windows features on or off**.
If you are prompted for an administrator password or confirmation, type the password or provide confirmation.
3. In the **Windows Features** dialog box, select the **Telnet Client** check box.
4. Click **OK**.
The installation might take several minutes.

i To use Telnet, you must log in as a user with Administrative privileges.

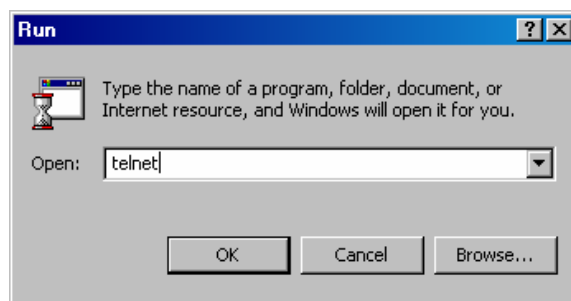
i This example uses the IP address of 10.25.124.148 and the MAC Address of 00-20-4a-51-01-a7.

To complete the IP address configuration of the D6682, launch a telnet session:

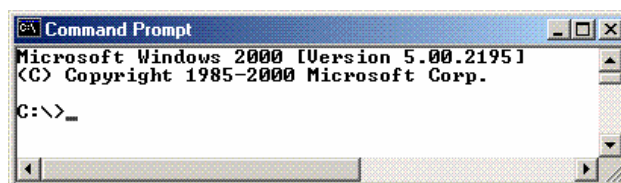
5. Select **Start → Run** to open an MS-DOS window.



6. Type **telnet** and click **OK**.



A DOS window appears:



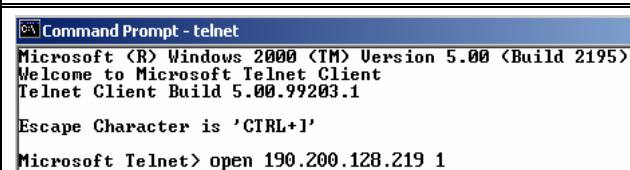
The colors are inverted here for clarity. The normal prompt window appears with white text on black.

7. At the **C:\>** prompt, type **telnet** and press [ENTER].



8. At the **Microsoft Telnet>** prompt, type **open** (space) **IP Address** (space) **Port Number**.

Figure 7: Command Prompt - telnet

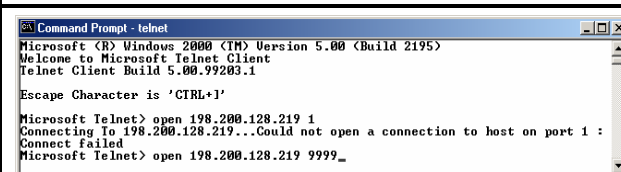


Example: open 190.220.128.219 1

The connection fails the first time. This is normal.

9. Press [F3] to show the last line typed.
10. Backspace over the port value and change it to **9999**.

Figure 8: Port Value Change

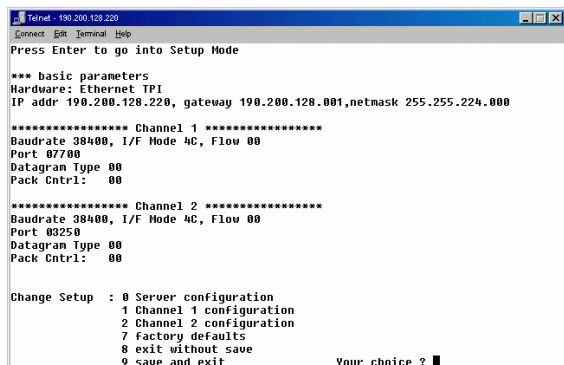


Example: open 190.220.128.219 9999

11. Press [ENTER].

12. If you pressed [ENTER] within five sec, you should see the following screen. Refer to *Figure 9*.

Figure 9: Telnet Session



```

Telnet - 190.200.128.220
Connect  Get  Terminal  Help
Press Enter to go into Setup Mode

*** basic parameters
Hardware: Ethernet TPI
IP addr 190.200.128.220, gateway 190.200.128.001, netmask 255.255.224.000

***** Channel 1 *****
Baudrate 38400, I/F Mode 4C, Flow 00
Port 07700
Datagram Type 00
Pack Cntrl: 00

***** Channel 2 *****
Baudrate 38400, I/F Mode 4C, Flow 00
Port 03250
Datagram Type 00
Pack Cntrl: 00

Change Setup : 0 Server configuration
                1 Channel 1 configuration
                2 Channel 2 configuration
                7 Factory defaults
                8 exit without save
                9 save and exit
                Your choice ? █
  
```

13. Press **[0] + [ENTER]** to set up the basic Server Configuration. You must enter the desired IP address.
- If the D6682 was already programmed with an IP address, the address appears in parentheses.
- For example, if this D6682 was originally programmed to IP address **190.200.128.152**, the address should be changed to **190.200.128.220**.
14. To properly program IP Address 190.200.128.220, press the following keys:
[1][9][0][ENTER][2][0][0][ENTER][1][2][8][ENTER][2][2][0][ENTER]



The IP and MAC addresses used in this example are not the same as the numbers you are using. This procedure is for demonstration only.

15. When asked to set the Gateway IP address (*Figure 10*), type **N** and press [ENTER] to accept the default.

Figure 10: Telnet session – Gateway Address

Set Gateway IP Address <N> _



The Gateway IP address is needed with a wide area network (WAN). In a local area network (LAN), the Gateway is usually not needed.

16. To change the Netmask from the default, enter the number of bits that correspond to the Netmask your network is using. Refer to *Table 2* on page 9).
 See your network administrator for more information.
17. Press [ENTER] after entering the correct number of bits for the Netmask.

Table 2: Netmask Address

| Number of Host Bits | Netmask |
|---------------------|-----------------|
| 1 | 255.255.255.254 |
| 2 | 255.255.255.252 |
| 3 | 255.255.255.248 |
| 4 | 255.255.255.240 |
| 5 | 255.255.255.224 |
| 6 | 255.255.255.192 |
| 7 | 255.255.255.128 |
| 8 | 255.255.255.0 |
| 9 | 255.255.254.0 |
| 10 | 255.255.252.0 |
| 11 | 255.255.248.0 |
| 12 | 255.255.240.0 |
| 13 | 255.255.224.0 |
| 14 | 255.255.192.0 |
| 15 | 255.255.128.0 |
| 16 | 255.255.0.0 |
| 17 | 255.254.0.0 |
| 18 | 255.252.0.0 |
| 19 | 255.248.0.0 |
| 20 | 255.240.0.0 |
| 21 | 255.224.0.0 |
| 22 | 255.192.0.0 |
| 23 | 255.128.0.0 |
| 24 | 255.0.0.0 |
| 25 | 254.0.0.0 |
| 26 | 252.0.0.0 |
| 27 | 248.0.0.0 |
| 28 | 240.0.0.0 |
| 29 | 224.0.0.0 |
| 30 | 192.0.0.0 |
| 31 | 128.0.0.0 |

18. When you are prompted to change the telnet password, press [N] for **No** (default setting). The Setup Mode screen appears again. Refer to *Figure 9* on page 8.



If you use a password, store it in a secure place. If the password is lost or forgotten you cannot connect to the telnet program on this unit again. The unit must be returned to the factory and reconditioned before it can receive another telnet session.

19. Press [1] [ENTER] to configure Channel 1. Baudrate 9600 appears.



The D6682 must be set to a baud rate of 38400.

20. Type **38400** and press [ENTER] to change the baud rate.
I/F Mode (4C) ? appears.
21. Press [ENTER] to accept **4C** (default setting) as the entry.
If a different value appears in parentheses, type **4C** and press [ENTER] to change the value.
Flow (00) ? appears.
22. Press [ENTER] to accept **00** (default setting) as the entry.
If a different value appears in parentheses, type **00** and press [ENTER] to change the value.
Port No (13257) ? appears.
23. For the Port number, type a number between 2000 and 10000, and press [ENTER].



If using two channels, set different port numbers for Channel 1 and Channel 2 (shown in the Telnet configuration screen).

ConnectMode (CC) ? appears.

24. Press [ENTER] to accept **CC** (default setting) as the entry, or type **CC** and press [ENTER] to change the value.
Datagram Type (00) ? appears.
25. If all field devices are using the same port number as entered in *Step 23*, type **00** and press [ENTER].



To use Datagram Type 02, Bosch firmware version 6.5.8.0 or later is required. Refer to the *Device Installer Operation and Installation Guide* (P/N: 4998138688) for more information.

26. If all field devices are using unique port numbers, type **02** and press [ENTER].



If Datagram Type 02 is used, enable it in the D6600 Receiver refer to the *D6600 Program Entry Guide* (P/N: 4998122702).

For more information on Datagram Types, refer to the *Conettix D6600 System Guide* (P/N: 4998122712).

27. If you want to enable encryption, select **6 Security** from the main menu and continue with *Step 28*.

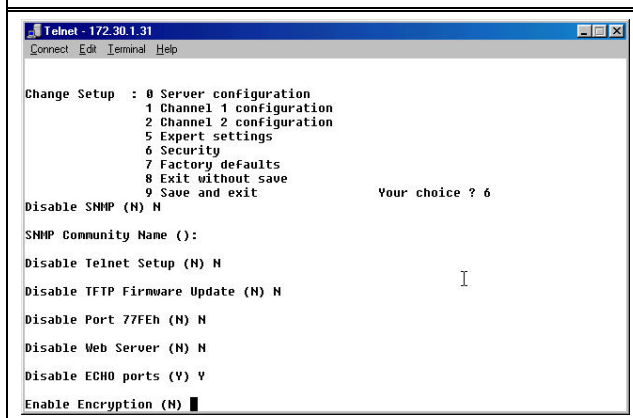


If encryption is enabled on the D6682 (refer to *Figure 11*), you must enable it on all field devices (C900TTL-E, D9133TTL-E, DX4020) with the same key. Encryption must also be enabled in the D6600 Receiver. Refer to the *D6600 Program Entry Guide* (P/N: 4998122702).



The network interface module (D6682, C900TTL-E, D9133TTL-E, or DX4020) must have the proper software version to support encryption. For more details, refer to the *Device Installer Operation and Installation Guide* (P/N: 4998138688).

Figure 11: D6682 Encryption



28. At **Disable SNMP (N) N**, press [ENTER].
29. At **SNMP Community Name ()**: press [ENTER].
30. At **Disable Telnet Setup (N) N**, press [ENTER].
31. At **Disable Port 77FEh (N) N**, press [ENTER].
32. At **Disable Web Server (N) N**, press [ENTER].
33. At **Disable ECHO ports (Y) Y**, press [ENTER].
34. At **Enable Encryption (N)**, press [ENTER].
35. At **Change keys (N)**, press [Y]. Enter keys as follows:
- These 16 bytes (32 characters) should match the bytes programmed in the D6682.
 - Default value is 01-02-03-04-05-06-07-08-09-10-11-12-13-14-15-16.
36. At **Enable Enhanced Password (N)**, press [ENTER].



After you make all the changes and verify them for accuracy, you must save the information.

```
Change Setup : 0 Server configuration
               1 Channel 1 configuration
               2 Channel 2 configuration
               7 factory defaults
               8 exit without save
               9 save and exit          Your choice ?
```

37. Select **9 – save and exit**. When the connection to host is lost, press [ENTER] to continue.

3.7 Programming Overview for the D6600

The D6600 Receiver is shipped with factory default program parameters and features already installed. Descriptions of the program items are found in the *D6600 Program Entry Guide* (P/N: 4998122702). Many of the operational features of the D6600 can be altered through programming options. The programming options you choose depend on:

- The type(s) of peripheral reporting device(s) used in your central station (for example external printer or automation computer)
- The supervision characteristics for these devices
- The type of communicators reporting to the receiver
- The number and type of receiving lines in use
- Sending the files back to the D6600 (CPU/Host/Network, Account Database, or Line Card)
- Upgrading the Software installed in the D6600 (CPU, System, or PSTN line cards)

Refer to the *D6200 Software Operation and Installation Guide* (P/N: 4998154991) for information and procedures on how to accomplish these tasks.

4.0 Specifications

| Table 3: Specifications | | |
|-------------------------|--|--|
| | | |
| Supported Protocols | ARP, UDP/IP, TCP/IP, Telnet, ICMP, SNMP, DHCP, BOOTP, TFTP, and HTTP | |
| Connectors | | |
| | Serial: | 2 - DB9M DTE serial ports |
| | Network: | 1 - RJ45 10Base-T/100Base-TX Ethernet port |
| Cables | | |
| | Ethernet: | CAT5 or better unshielded twisted pair Max Length: 6 m (20 ft) and installed in same enclosure/rack as D6600. |
| | RS-232: | Max Length: 6 m (20 ft) and installed in same enclosure/rack as D6600. |
| Data Rates | Serial speed ranging from 300 bps to 115.2 kbps | |
| Serial Line Formats | | |
| | Characters | 7 or 8 data bits |
| | Stop bits: | 1 or 2 |
| | Parity: | Odd, even, none |
| Modem Controls | DTR, DSR | |
| Flow Control | Software: XON/XOFF Hardware: CTS/RTS | |
| Management | HTTP (internal web server) SNMP (read only) Serial login Telnet login DeviceInstaller software | |
| System Software | Flash ROM standard: downloadable from a TCP/IP host (TFTP) or over serial port | |
| Diagnostic LEDs | Power 10/100 Mb Link on RJ45, 10/100 Activity on RJ45 RX Serial 1 Activity, TX Serial 1 Activity, RX Serial 2 Activity, TX Serial 2 Activity | |
| Compatibility | Ethernet: v2.0/IEEE 802.3 D6600 | |
| AC Current Required | UPS Standby Current: 0.4 A | |
| Power Input | Transformer: Group West, Part Number 48D-12-900. AC nominal operating range: 120 VAC, 60 Hz, 0.15A max | |
| Standby Power | An uninterrupted power supply (UPS) is required for use with the D6682, when used for UL Fire (UL1481) Protective Signaling Systems. A 60 hr. minimum UPS standby power supply is required for UL Certification. | |
| Environmental | | |
| | Operating Temperature: | 0° to 50° C (32° to 122° F) |
| | Storage Temperature: | -40° to 85° C (-40° to 185° F) |
| Dimensions (H x W x D): | | |
| Weight | Unit: | 3.75 in. x 2.9 in. x .9 in. (9.5 cm x 7.3 cm x 2.3 mm) |
| | 0.6 lbs. (0.26 kg) | |

Bosch Security Systems, Inc.
130 Perinton Parkway
Fairport, NY 14450-9199
(800) 289-0096

© 2009 Bosch Security Systems, Inc.
F01U078049-02



BOSCH